

sub
c2
B4
Claim 1. (Amended) A device for switching ATM cells establishing a single path per virtual circuit, having $N \cdot R$ inputs and $N \cdot R$ outputs, N and R being two integers not less than two, the device comprising at least two stages, including an inlet stage (21; 31; 41₁, ..., 41_R) having $R \cdot N$ sets of Q outputs (213₁₁; 313₁₁; 413₁₁) and an outlet stage (22; 33; 421₁, ..., 422₁, ...) having $R \cdot N$ sets of Q' inputs (222₁; 332_{1,1}; 423_{1,1}),

characterized in that for the flow of data carried by any intermediate link (213_i, 222_j; 313_i, 332_j, 413_i, 423_j) that is part of the single path set up between an input and an output to be a subset of the incoming flux at that input and also a subset of the outgoing flux at that output, each input (212_i; 312_i; 412_i) of the inlet stage can be connected to an output of the inlet stage which can be selected only from Q outputs (213₁₁, ..., 213_{R1}; 313₁, ..., 313_{1R}; 413₁₁, ..., 413_{1R}) exclusively associated with that input; and

in that each output (223₁; 333_i; 442₁) of the outlet stage can be connected to an input of the outlet stage which can be selected only from Q' inputs (222₁₁, ..., 222_{1R}; 332₁₁, ..., 332_{R1}; 423₁₁, ..., 423_{1R}) of the outlet stage exclusively associated with that output.

sub
D1
B5
Claim 3. (Amended) A switching device according to claim 1 including an inlet stage (31), a central stage (32), and an outlet stage (3); characterized:

- in that, Q being equal to R , the inlet stage (31) comprises N matrices (311_i, ...) each having R inputs (312_i, ...) and R^2 outputs (313₁₁, ...), those outputs being organized into R sets of R outputs each corresponding to one of said R inputs, and in that each input (312_i) of that

U.S. APPLICATION NO. 09/242,822
AMENDMENT UNDER 37 C.F.R. § 1.111

matrix can be connected to an output of that matrix which can be selected only from R outputs (313₁₁, ..., 313_{R1}) of the set of outputs corresponding to that input;

- in that the central stage (32) comprises R sets of R matrices (321₁₁, ...) each having N inputs and N outputs, the R outputs of each set of outputs of the inlet stage being connected to inputs belonging to the same set of R matrices of the central stage; and

b5 - in that, Q' being equal to R, said outlet stage (33) comprises N matrices (331₁, ...) each of those matrices having R² inputs (332₁, ...) and R outputs (333₁, ...), those R² inputs being organized into R sets of R inputs, each set respectively corresponding to one of those R outputs; and in that each output (333₁, ...) of that matrix can be connected to an input of that matrix which can be selected only from R inputs (332₁₁, ..., 332_{R1}) of the set of inputs corresponding to that output; and in that the R inputs (322₁₁, ..., 322_{R1}) of each set are respectively connected to R outputs respectively belonging to the R sets of matrices of the central stage (32).
